

ABSTRACT

FOR POSTER SESSION AT THE SELECTIVE CATALYTIC AND NON-CATALYTIC REDUCTION CONTROL MAY 17 – 18, 2000

TITLE: LOW COST INTEGRATED NO_x SOLUTIONS COMBINING ROFA WITH SCR

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MANY POWER PLANT OWNERS ARE IN THE PROCESS OF DEVELOPING THEIR STRATEGY TO BRING THEIR SYSTEM IN COMPLIANCE WITH NO_x PROPOSED REGULATIONS. ON MOST COAL FIRED UNITS, THE ONLY APPARENT VIABLE STRATEGY IS THE INSTALLATION OF SELECTIVE CATALYTIC REDUCTION SYSTEM (SCR), WHICH HAS A VERY HIGH CAPITAL COST AND A SUBSTANTIAL OPERATING AND MAINTENANCE COST. UNFORTUNATELY, TIME CONSTRAINTS HAVE FORCED MANY OWNERS TO COMMIT TO EXPENSIVE SCR'S.

A SWEDISH-DEVELOPED NO_x REDUCTION SYSTEM CALLED **ROFA** (ROTATING OPPOSED FIRE AIR) HAS BEEN SUCCESSFULLY INSTALLED ON 17 BOILERS IN SWEDEN. THE FIRST USA INSTALLATION IS SCHEDULED FOR EARLY JUNE OF THIS YEAR. **ROFA**, UNLIKE STANDARD OVERFIRE AIR, INCREASES TURBULENCE IN THE FURNACE AND ALSO INCREASES THE RETENTION TIME THROUGH THE INTRODUCTION OF ENERGY INTO THE AIR SYSTEM. THIS RESULTS IN LOWER NO_x COUPLED WITH A REDUCTION IN OXYGEN LEVELS AND LOI (UNBURNED CARBON) AND AT THE SAME TIME MAINTAINING CO LEVELS. NO_x REDUCTIONS BETWEEN 40 TO 60% ARE EXPECTED.

COMBINING **ROFA** WITH SCR WILL REDUCE THE CHEMICAL COSTS AND THE CATALYST REPLACEMENT COSTS NORMALLY ASSOCIATED WITH A SCR SYSTEM. THIS COMBINATION CAN ALSO RESULT IN A SUBSTANTIAL REDUCTION IN CAPITAL COST SINCE THE SIZE OF THE SCR SYSTEM CAN BE REDUCED BY AT LEAST 50%. THIS POSTER SESSION WILL SHOW AN ECONOMIC STUDY ON THIS COMBINATION FOR THREE DIFFERENT SIZE COAL FIRED UNITS, 150 MW, 300 MW, AND 500 MW.